

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claim 1 (previously presented): A device for performing surgery or therapeutic interventions on a patient, comprising:

    a first non-invasive curvature sensor configured to be placed externally on a patient, the first non-invasive curvature sensor providing first external curvature data;

    imageable fiducials coupled to the first non-invasive curvature sensor; and  
    an attachment fixture coupled to the first non-invasive curvature sensor;

and

    a computer configured to receive the first external curvature data and relate the curvature of the first non-invasive curvature sensor to the location of the imageable fiducials.

Claim 2 (Cancelled)

Claim 3 (previously presented): The device of claim 1, further comprising:

    a second non-invasive curvature sensor providing second external curvature data, the second non-invasive curvature sensor having a first end and a second end and capable of being coupled to the attachment fixture at the

first end; and

    a tool connector coupled to the second end of the second non-invasive curvature sensor.

Claim 4 (previously presented): The device of claim 3, further comprising a second attachment fixture capable of being positioned at a known location with respect to the first non-invasive curvature sensor, wherein the second end of the second non-invasive curvature sensor is coupled to the second attachment fixture and the tool connector is coupled to the second non-invasive curvature sensor between the first end and the second end.

Claim 5 (original): The device of claim 3, further comprising a monitor for positionally displaying the tool connector with respect to the patient.

Claim 6 (cancelled)

Claim 7 (original): The device of claim 3, further comprising an optical tracking system electronically coupled to the computer and configured to positionally track the tool connector or a tool positioned in the tool connector.

Claim 8 (previously presented): The device of claim 7, wherein the computer uses both the second non-invasive curvature sensor and the optical tracking system to positionally track the tool connector or a tool positioned in the tool connector.

Claim 9 (previously presented): The device of claim 1, wherein the computer is configured to determine an attachment fixture-centered frame of reference based on the first external curvature data.

Claim 10 (previously presented): The device of claim 1, wherein the first non-invasive curvature sensor comprises a fiber optic curvature sensor.

Claim 11 (previously presented): The device of claim 1, wherein the attachment fixture comprises:

at least one imageable fiducial; and  
a latching mechanism configured for attaching to the first end of the non-invasive second curvature sensor.

Claim 12 (previously presented): A device for performing surgery or therapeutic intervention on a patient, comprising:

an attachment fixture;  
at least one imageable fiducial coupled to the attachment fixture, the imageable fiducial being capable of being detected by a medical imaging system;  
a non-invasive curvature sensor having a first end and a second end and capable of being coupled to the attachment fixture at the first end, the non-invasive curvature sensor configured to be placed externally on a patient, the

non-invasive curvature sensor configured to provide external curvature data ;  
a tool connector coupled to the second end of the non-invasive curvature  
sensor; and  
a computer configured to receive the external curvature data and relate  
the curvature of the first non-invasive curvature sensor to the location of the  
imageable fiducials.

Claim 13 (previously presented): A device for use in an image guided therapy or  
image guided surgery system, comprising:

a non-invasive curvature sensor configured to be applied externally to a  
portion of a patient, the non-invasive curvature sensor being adapted to  
measure and provide external curvature data;  
imageable fiducials located on the non-invasive curvature sensor;  
an attachment fixture coupled to the non-invasive curvature sensor, the  
attachment fixture comprising an imageable fiducial; and  
a computer configured to receive the external curvature data and relate  
the curvature of the non-invasive curvature sensor to the location of the  
imageable fiducials.

Claim 14 (cancelled)

Claim 15 (previously presented): The device for use in an image guided therapy  
or image guided surgery system according to claim 13, wherein the non-

invasive curvature sensor comprises a fiber optic curvature sensor.

Claim 16 (previously presented): A device for generating a patient based frame of reference for an image guided therapy or image guided surgery system, comprising:

    a non-invasive curvature sensor configured to be applied externally to a portion of a patient, the non-invasive curvature sensor being adapted to measure and provide external curvature data of the curvature of the portion of the patient;

    imageable fiducials coupled to the non-invasive curvature sensor; and  
    an attachment fixture coupled to the non-invasive curvature sensor at a known position with respect to the non-invasive curvature sensor; and

    a computer configured to receive the external curvature data and relate the curvature of the non-invasive curvature sensor to the location of the imageable fiducials.

Claim 17 (previously presented): A device for generating a patient-based frame of reference for an image guided therapy or image guided surgery system according to claim 16, wherein each of the imageable fiducials are coupled to the non-invasive curvature sensor at known inter-fiducial distances.

Claim 18 – 25 (cancelled)

Claim 26 (previously presented): A system for monitoring or enabling surgery on a patient at a distance, comprising:

    a first non-invasive curvature sensor configured to be placed externally on the patient, the first non-invasive curvature sensor providing first external curvature data;

    imageable fiducials coupled to the first non-invasive curvature sensor;

    an attachment fixture attached to the first non-invasive curvature sensor;

    a second non-invasive curvature sensor having a first end and a second end and capable of being coupled at the first end to the attachment fixture, the second non-invasive curvature sensor providing second external curvature data;

    a tool capable of being coupled to the second end of the second non-invasive curvature sensor; and

    a computer configured to:

        receive the first external curvature data;

        receive the second external curvature data;

        relate the curvature of the first non-invasive curvature sensor to the location of the imageable fiducials;

        provide an output of the curvature of the first non-invasive curvature sensor and the position and orientation of the tool coupled to the second end of the second non-invasive curvature sensor with respect to the attachment fixture; and

        communicate the output of the computer to a distant receiver

using a communication device that is electronically coupled to the computer.

Claim 27 – 30 (cancelled)

Claim 31 (previously presented): A device for conducting surgery or therapy on a body, comprising:

means for externally measuring the curvature of a body;  
means for locating the position of the means for externally measuring the curvature of a body within a frame of reference;  
means for determining the position of a tool with respect to the means for externally measuring the curvature of a body; and  
means for registering a volumetric image of the body to the means for externally measuring the curvature of a body.